

WHAT IS CLAIMED IS:

1. A displacement sensor comprising:
 - a detection coil;
 - an oscillation circuit for generating a high-frequency magnetic field in the detection coil;
 - a controller for inputting a signal showing an oscillation state of the oscillation circuit and detecting a distance to a detection object;
 - a memory for storing a conversion table for detecting the distance; and
 - an operation portion for inputting distance data for the detection object,
- wherein the controller comprises:
 - actually measured value recognizing means for inputting a signal showing an oscillation state of the oscillation circuit while corresponds to the data input from the operation portion and recognizing a value in the obtained signal as an actually measured value corresponding to the distance in the input data;
 - correcting means for correcting a source table showing a standard relation between a measured value in the oscillation circuit and a distance to the detection object so as to be matched to a recognition result of the actually measured value recognizing means for arbitral three distances; and
 - storing means for storing the relation between each measured value after corrected and distance in the memory as the conversion

table.

2. A method of creating a conversion table for detecting a distance, used in processing for converting an oscillation state of an oscillation circuit, to a distance to a detection object, in a displacement sensor including a detector in which the oscillation circuit generates an AC magnetic field for detecting the object; comprising

a step of arranging the detection object at each measurement point of any three measurement points whose distance from the displacement sensor is known, in any order and measuring the oscillation state of the oscillation circuit at the measurement point;

a step of extracting a range which corresponds to a distance between the nearest measurement point and the farthest measurement point from the detector, in which a ratio between measured values corresponding to measurement points closely resembles a ratio between the actually measured values at the measurement points, from a source table showing a standard relation between the measured value of the oscillation circuit and a distance to the detection object;

a step of correcting a measured value included in the range extracted from the source table so that the measured value corresponding to the measurement point may be matched to the actually measured value; and

a step of setting a table showing a relation between the

measured value after corrected and the distance as the conversion table.

3. A displacement sensor comprising:

- a detection coil;
- an oscillation circuit for generating a high-frequency magnetic field in the detection coil;
- a controller for inputting a signal showing an oscillation state of the oscillation circuit and detecting a distance to a detection object;
- a memory for storing a conversion table for detecting the distance; and
- an operation portion for inputting data showing a distance to the detection object,

wherein the controller comprises:

- actually measured value recognizing means for inputting a signal showing an oscillation state of the oscillation circuit while corresponds to the data input from the operation portion and recognizing a value in the obtained signal shows as an actually measured value corresponding to the distance in the input data;
- extracting means for extracting a range which corresponds to a difference between the farthest distance and the shortest distance, in which a ratio between measured values corresponding to the three measurement points closely resembles a ratio between the actually measured values, from a source table showing a standard relation between the measured value of the oscillation circuit

and a distance to the detection object, based on a recognition result of the actually measured value recognizing means for any three distances;

correcting means for correcting a measured value included in the range extracted by the extracting means so that the measured value corresponding to the distance may be matched to the actually measured value; and

storing means for storing the relation between the measured value after corrected and distance in the memory as the conversion table.

4. The displacement sensor according to claim 3, wherein the operation portion is set so as to be able to perform a confirming operation, and the actually measured value recognizing means of the controller comprises modifying means for modifying the recognition result by receiving a retype for the already recognized actually measured value or a distance until the confirming operation is performed.